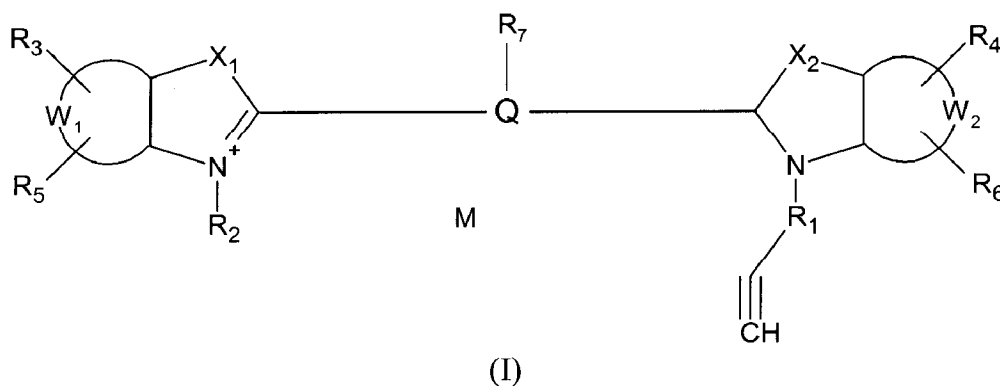


Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A cyanine modified with an alkynyl-linker arm, having the following general formula (I), including the valence tautomers thereof:



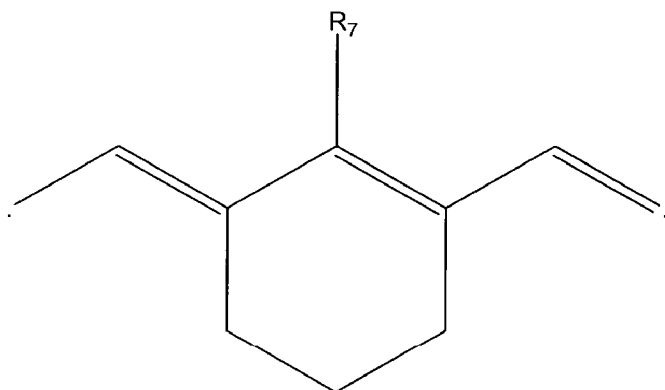
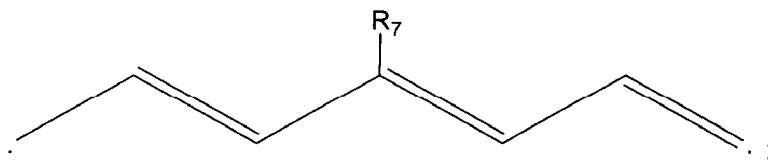
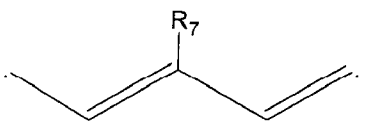
wherein

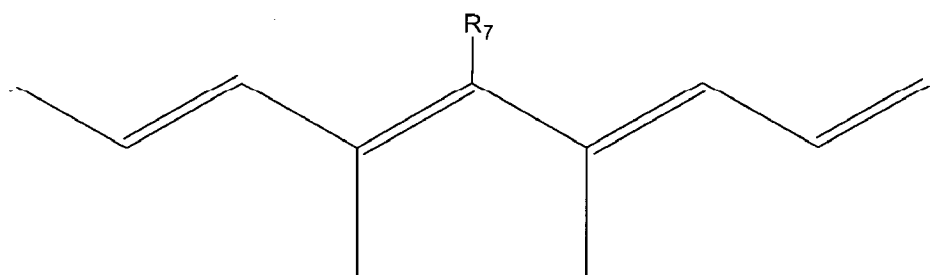
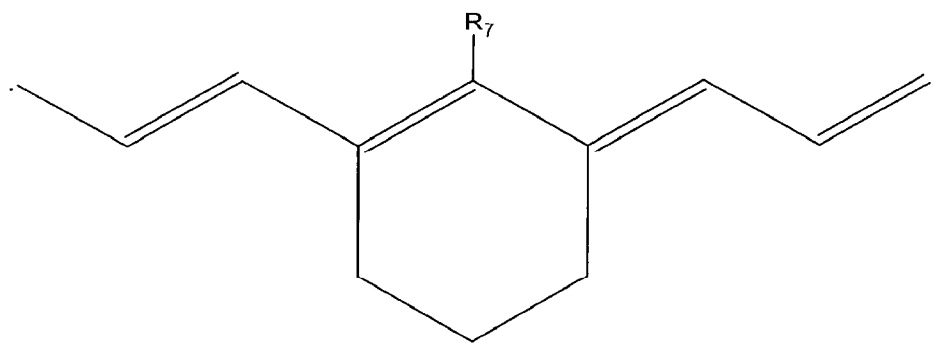
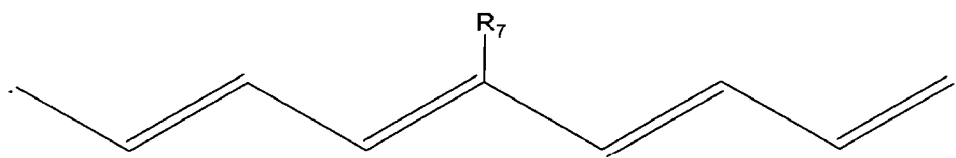
R₁ is a linear, saturated or unsaturated alkyl chain, having from 1 to 30 carbon atoms, wherein one or more carbon atoms are each optionally substituted by a component independently selected from an oxygen or a sulfur atoms, a –NH– or a –CONH– group, or a cyclic 4-, 5- or 6-membered grouping of carbon atoms, aromatic or not aromatic, wherein one or more carbon atoms are each optionally substituted by a heteroatom independently selected from oxygen, sulfur, nitrogen and selenium; W₁ and W₂ are independently selected from a benzene ring and a naphthalene ring wherein one or more carbon atoms are optionally substituted by one or more heteroatoms selected from oxygen, sulfur, selenium and nitrogen, or one of W₁ and W₂ is absent, or both of them are absent; X₁ and X₂ are independently selected from the group consisting of –O–, –S–, –Se–, –C(CH₃)₂–, –NH– and –CH=CH–, R₂, R₃, R₄, R₅ and R₆ are independently selected from hydrogen, –COOH, –OH, –NO₂, –OCH₃, –SO₃H, –SO₃[–], and –R₈–Y wherein R₈ is a linear, saturated or unsaturated alkyl chain, having from 1 to 30 carbon atoms, wherein one or more carbon atoms are each optionally substituted by a component independently selected by an oxygen or a sulfur atom, a –NH– or a –CONH– group, or a cyclic 4-, 5- or 6- membered

grouping of carbon atoms, aromatic or not aromatic, wherein one or more carbon atoms are each optionally substituted by a heteroatom independently selected from oxygen, sulfur, nitrogen or selenium, and wherein Y is selected from the group consisting of carboxyl, carbonyl, amino, sulphydryl, thiocyanate, isotyocianate, isocyanate, maleimide, hydroxyl, phosphoramidite, glycidyl, imidazolyl, carbamoyl, anhydride, bromoacetamido, chloroacetamido, iodoacetamido, sulphonyl halide, acyl halide, aryl halide, hydrazide, succinimidyl ester, hydroxysulfosuccinimidyl ester, phthalimidyl ester, naphthalimidyl ester, monochlorotriazine, dichlorotriazine, mono- or di- halide substituted pyridine, mono- or di- halide substituted diazine, aziridine, imidic ester, hydrazine, azidonitrophenyl, azide, 3-(2-pyridyldithio)-propionamide, glyoxal, aldehyde, nitrophenyl, dinitrophenyl, and trinitrophenyl, provided that one of R₂, R₃, R₄, R₅ and R₆ is -R₈-Y;

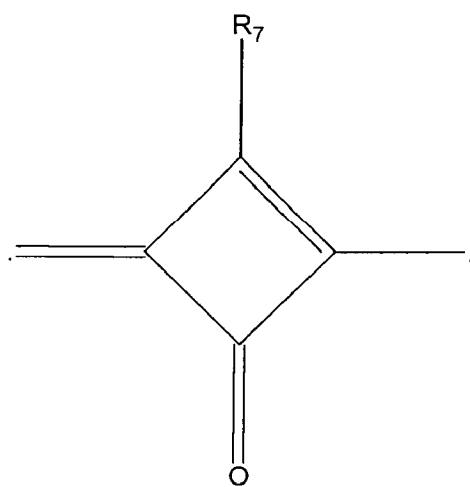
M is a counterion; and

Q is a polymethinic chain selected from:





or



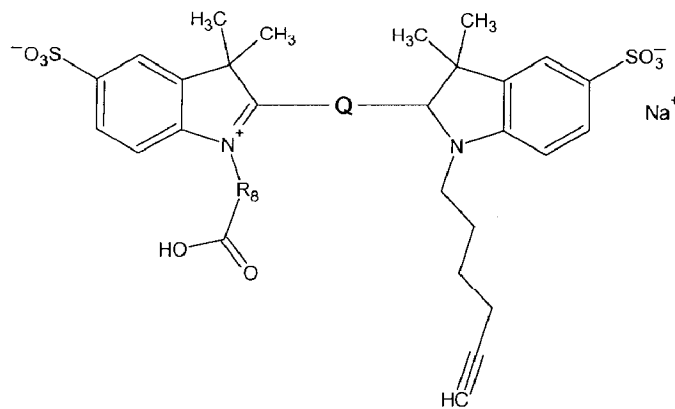
wherein R₇ is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, iodine, phenoxy, thiophenoxy, anilino, cyclohexylamino, piridine, -R₈-Y, -O-R₈-Y, -

$S-R_8-Y$, $-NH-R_8-Y$, wherein R_8 and Y are as defined above, and aryl optionally substituted by one or more substituents independently selected from the group consisting of $-SO_3H$, carboxyl ($-COOH$), amino ($-NH_2$), carbonyl ($-CHO$), thiocyanate ($-SCN$), isothiocyanate ($-CNS$), epoxy and $-COZ$ wherein Z represents a leaving group.

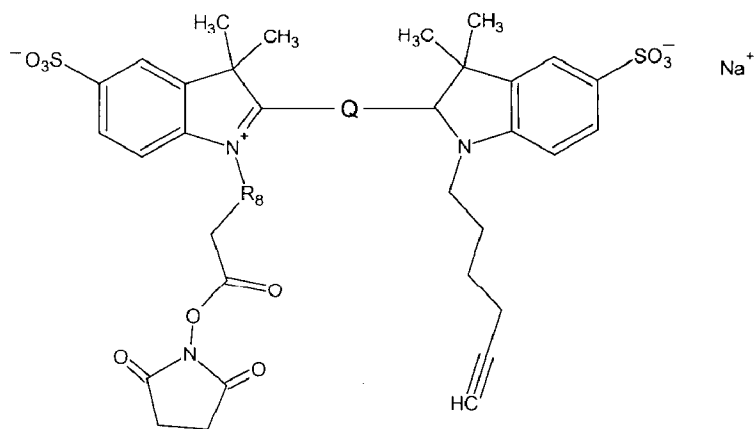
2. (original) The cyanine according to claim 1, wherein said leaving group is selected from the group consisting of $-Cl$; $-Br$; $-I$; $-OH$; $-OR_{11}$; $-OCOR_{11}$, wherein R_{11} is linear or branched alkyl having from 1 to 4 carbon atoms; $-O-CO-Ar$, wherein Ar is aryl optionally substituted; $-O-CO-Het$, wherein Het is selected from succinimide, sulfosuccinimide, phthalimide and naphthalimide; $-NR_{22}R_{33}$, wherein R_{22} and R_{33} are each independently linear or branched alkyl having from 1 to 10 carbon atoms.

3. (canceled)

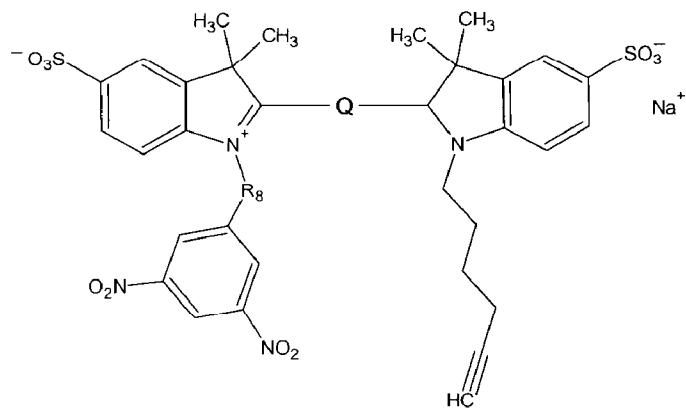
4. (previously presented) The cyanine according to claim 2 selected from the group consisting of:



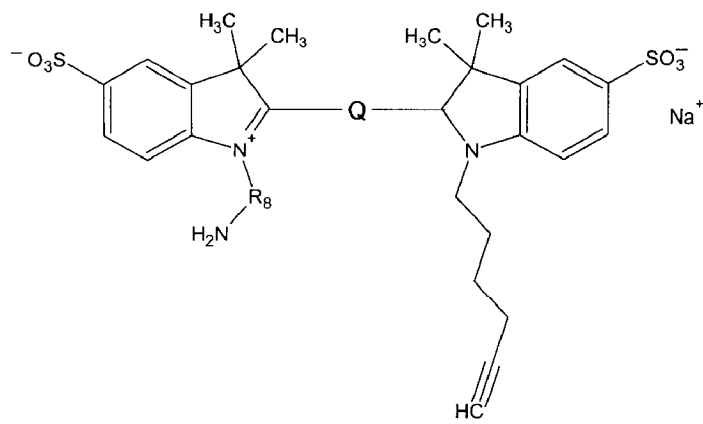
Formula (Ib)



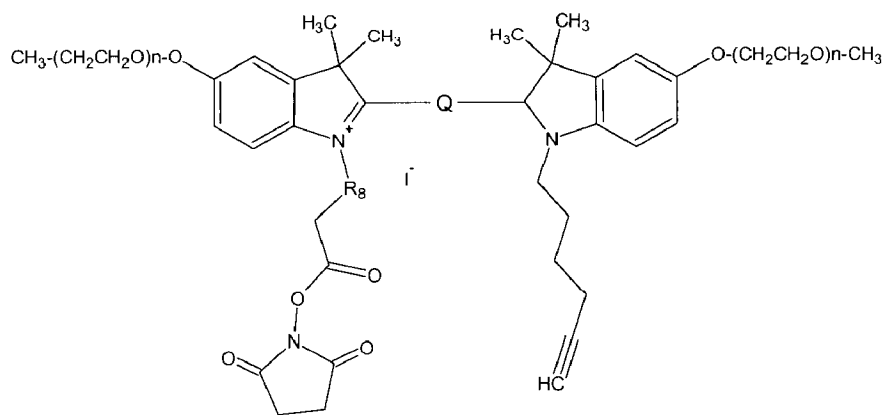
Formula (Ic)



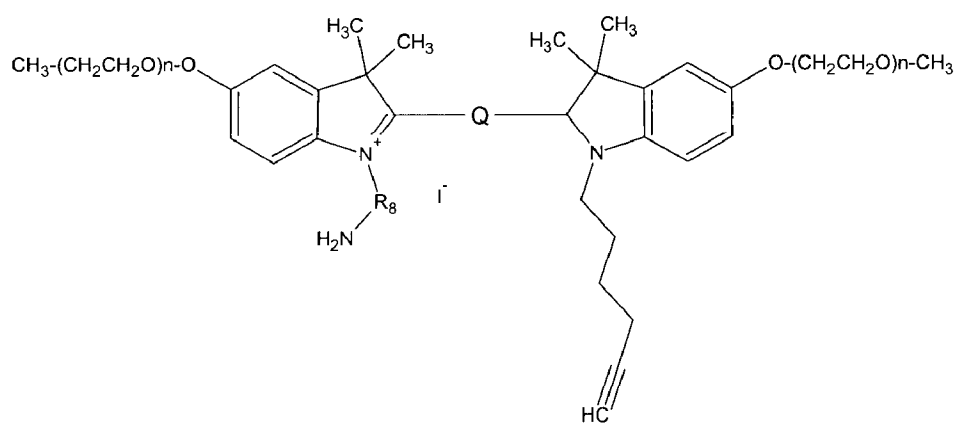
Formula (Id)



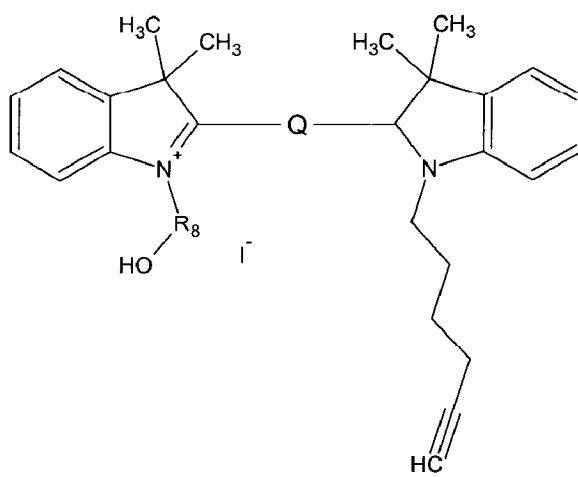
Formula (Ie)



Formula (II)



Formula (Im)



Formula (In),

wherein Q and R₈ are as defined in claim 1 and n is an integer between 1 and 100.

5. (canceled)

6. (currently amended) The conjugated cyanine according to claim 14 [[5]], wherein said biomolecule is selected from the group consisting of nucleotides, nucleosides, oligonucleotides, nucleic acids, peptides and proteins.

7. (canceled)

8. (currently amended) The conjugated cyanine according to claim 15 [[7]], wherein said second fluorescent dye is N,N'-Difluoroboryl-1,9-dimethyl-5-(4-iodophenyl)-dipyrrin.

9. (currently amended) The conjugated cyanine according to claim 15 [[7]], wherein said second fluorescent dye is a transition metal complex with at least one heterocyclic nitrogen-containing ligand.

10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (new) The cyanine according to claim 1, further comprising a biomolecule conjugated through the linker arm $-R_1-C\equiv CH$.

15. (new) The cyanine according to claim 1, further comprising a second fluorescent dye conjugated through the linker arm $-R_1-C\equiv CH$, said second fluorescent dye being capable of emitting fluorescence at wavelengths at which the cyanine is capable of absorbing, or said fluorescent dye being capable of absorbing at wavelengths at which the cyanine is capable of emitting.

16. (new) The cyanine according to claim 1, further comprising a first biomolecule

conjugated through the linker arm $-R_1-C\equiv CH$ and a second equal or different biomolecule conjugated through the linker arm $-R_8-Y$, wherein the first biomolecule is selected from the group consisting of nucleotides, nucleosides, oligonucleotides, nucleic acids, peptides, proteins, vitamins and hormones, and the second equal or different biomolecule is selected from the group consisting of nucleotides, nucleosides, oligonucleotides, nucleic acids, peptides, proteins, vitamins and hormones.